In the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1.-37. (Cancelled)

38. (Currently Amended): A system for sending segments using different forward error correction methods on a network comprising:

~~A.~~ a plurality of network nodes forming a network;

~~B.~~ a time division multiplexed data transfer link which is divided into a plurality of time slots for transfer of one or more variable length data segments that include a data segment error detection mechanism segment and an acknowledgement segment between said plurality of network nodes on said network;

~~C.~~ wherein said plurality of network nodes includes ~~further comprises~~ a sending network node;

~~D. wherein~~ said sending network node further including ~~comprises~~ a dynamic forward error correction encoder which generates said one or more variable length data segments having a dynamic preamble based on the length of said one or more variable length data segments and wherein said dynamic forward error correction encoder generates a forward error correction field which size is based on the dynamic preamble; and

~~E.~~ wherein said encoder selects ~~the system is configured to select a forward error correction method, from among more than one forward error correction methods,~~ based upon the number of errors and the type of errors on the network ~~on network error conditions~~ of a communication channel associated with said sending network node, ~~wherein said forward error correction method is selected to adapts dynamically to changing network error conditions; and wherein at least one of (1)~~ the ~~choice of~~ error correction method and ~~(2)~~ the amount of error correction to be used to adapt dynamically to changing network error conditions~~, depends upon the number of errors and the type of errors on the network~~.

39. (Original): A system for sending segments using different forward error correction methods on a network as recited in claim 38, wherein said network is selected

from the group consisting of a wireless network, a light frequency network, a power line network, and a wired network.

40. (Canceled)

41. (Previously Presented): A system for sending segments using different forward error correction methods on a network as recited in claim 38, wherein said dynamic forward error correction encoder encodes a segment with a forward error correction method selected from the group consisting of Hamming codes, Convolutional codes, Reed-Solomon codes, Low Density Parity Check Codes, Trellis codes, Block Turbo codes and Walsh codes.

42. (Original): A system for sending segments using different forward error correction methods on a network as recited in claim 38, wherein said dynamic forward error correction encoder generates a preamble that is 40 bits in length.

43. (Original): A system for sending segments using different forward error correction methods on a network as recited in claim 38, wherein said dynamic forward error correction encoder encodes segments with a (5/16) rate forward error correction code.

44. (Original): A system for sending segments using different forward error correction methods on a network as recited in claim 38, wherein said dynamic forward error correction encoder generates a preamble that indicates no forward error correction.

45. (Canceled)

46. (Previously Presented): A system for sending segments using different forward error correction methods on a network as recited in claim 38, wherein said dynamic forward error correction encoder generates a preamble based on a network condition.

47. (Original): A system for sending segments using different forward error correction methods on a network as recited in claim 46 wherein said network condition is selected from the group consisting of one or more cyclic redundancy check errors and one or more forward error correction errors.

48.-57. (Cancelled)

58. (Currently Amended): A system for receiving segments using different forward error correction methods on a network comprising:

~~A.~~ a plurality of network nodes forming a network wherein said plurality of network nodes includes ~~further comprises~~ a receiving network node;

~~B.~~ a time division multiplexed data transfer link which is divided into a plurality of time slots for transfer of one or more variable length data segments between said plurality of network nodes on said network;

~~C.~~ wherein said receiving network node includes ~~further comprises~~ a dynamic forward error detection decoder which decodes said one or more variable length data segments and determines the length of said one or more variable length data segments based at least in part upon a preamble; and

~~D.~~ wherein the decoder uses an error correction method and an amount of error correction ~~system is configured to dynamically utilize different forward error correction methods selected, from among more than one forward error correction methods,~~ based upon the number of errors and the type of errors on the network ~~on network error conditions~~ of a communication channel associated with said receiving network node~~,~~ ~~wherein said forward error correction method is selected~~ to adapt dynamically to changing network error conditions~~; and wherein at least one of (1) the choice of error correction method and (2) the amount of error correction, depends upon the number of errors and the type of errors on the network~~.

59. (Original): A system for receiving segments using different forward error correction methods on a network as recited in claim 58, wherein said network is selected from the group consisting of a wireless network, a light frequency network, a power line network, and a wired network.

60. (Previously Presented): A system for receiving segments using different forward error correction methods on a network as recited in claim 58, wherein said dynamic forward error correction decoder decodes a forward error correction segment size based at least in part upon a preamble.

61. (Canceled)

62. (Original): A system for receiving segments using different forward error

correction methods on a network as recited in claim 58, wherein said dynamic forward error correction decoder decodes said data segments with a method selected from the group consisting of Hamming codes, Convolutional codes, Reed-Solomon codes, Low Density Parity Check Codes, Trellis codes, Block Turbo codes and Walsh codes.

63. (Original): A system for receiving segments using different forward error correction methods on a network as recited in claim 58, wherein said dynamic forward error correction decoder is used to detect errors within said one or more data segments.

64. (Original): A system for receiving segments using different forward error correction methods on a network as recited in claim 58, wherein said dynamic forward error correction decoder is used to correct errors within said one or more data segments.

65. (Previously Presented): A system for receiving segments using different forward error correction methods on a network as recited in claim 58, wherein said dynamic forward error correction decoder decodes based at least in part upon a preamble that is 40 bits in length.

66. (Previously Presented): A system for receiving segments using different forward error correction methods on a network as recited in claim 58, wherein said dynamic forward error correction decoder decodes data using a 5/16 rate forward error correction code.

67. (Previously Presented): A system for receiving segments using different forward error correction methods on a network as recited in claim 58, wherein said dynamic forward error correction decoder decodes a preamble which indicates no forward error correction.

68.-125. (Cancelled)

126. (Currently Amended): A method for sending segments using different forward error correction methods on a network comprising:

~~A.~~ selecting a forward error correction method, the amount of error correction to use and an associated preamble~~, wherein said forward error correction method is selected, from among more than one forward error correction methods~~, based on the number of errors and the type of errors on the network ~~error conditions~~ of a communication channel

associated with a sending network node~~, wherein said forward error correction method is selected to adapt~~ to dynamically adapt to changing network error conditions~~, and wherein at least one of (1) the choice of error correction method and (2) the amount of error correction, depends upon the number of errors and the type of errors~~ on the network;

~~B.~~ adding forward error correction to the segment data; and

~~C.~~ sending said associated preamble, which identifies said forward error correction method and contains said segment data, from said sending network node across a time division multiplexed network.

127. (Original): A method for sending segments using different forward error correction methods on a network as recited in claim 126, wherein sending said segment data further comprises sending said segment data on said network further comprising a network selected from the group consisting of a wireless network, a light frequency network, a power line network, and a wired network.

128. (Previously Presented): A method for sending segments using different forward error correction methods on a network as recited in claim 126, wherein selecting said forward error correction method further comprises selecting a forward error correction method selected from the group consisting of Hamming codes, Convolutional codes, Reed-Solomon codes, Low Density Parity Check Codes, Trellis codes, Block Turbo codes and Walsh codes.

129. (Previously Presented): A method for sending segments using different forward error correction methods on a network as recited in claim 126, wherein said selecting said associated preamble further comprises selecting a preamble that is 40 bits in length.

130. (Previously Presented): A method for sending segments using different forward error correction methods on a network as recited in claim 126, wherein selecting said forward error correction method further comprises selecting a forward error correction method which uses a 5/16 rate forward error correction code.

131. (Previously Presented): A method for sending segments using different forward error correction methods on a network as recited in claim 126, wherein selecting said preamble further comprises selecting a preamble which indicates no forward error correction.

132. (Previously Presented): A method for sending segments using different forward error correction methods on a network as recited in claim 126, wherein said selecting of said forward error correction method is based at least in part upon said segment data length.

133. (Previously Presented): A method for sending segments using different forward error correction methods on a network as recited in claim 126, wherein said selecting of said forward error correction method further comprises selecting a forward error correction method based at least in part upon a network condition.

134. (Previously Presented): A method for sending segments using different forward error correction methods on a network as recited in claim 133 wherein said selecting of said forward error correction method further comprises selecting a forward error correction method based at least in part upon a network condition selected from the group consisting of one or more cyclic redundancy check errors and one or more forward error correction errors.

135.-143. (Cancelled)

144. (Currently Amended): A method for receiving segments using different forward error correction methods on a network comprising:

~~A.~~ receiving a preamble and segment data encoded with forward error correction on a receiving network node on a time division multiplexed network; and

~~B.~~ determining from said preamble a forward error correction method and the amount of error correction to use ~~based on said preamble; wherein said forward error correction method is selected, from among more than one forward error correction methods,~~ based on the number of errors and the type of errors on the network ~~error conditions~~ of a communication channel associated with said receiving network node, ~~wherein said forward error correction method is selected to adapt~~ to dynamically adapt to changing network error conditions~~; and wherein at least one of (1) the choice of error correction method and (2) the amount of error correction, depends upon the number of errors and the type of errors~~ on the network.

145. (Previously Presented): A method for receiving segments using different forward error correction methods on a network as recited in claim 144, wherein said network is

selected from one of: a wireless network, a light frequency network, a power line network, and a wired network.

146. (Previously Presented): A method for receiving segments using different forward error correction methods on a network as recited in claim 144, wherein determining said forward error correction method further comprises determining a forward error correction code's length.

147. (Previously Presented): A method for receiving segments using different forward error correction methods on a network as recited in claim 144, wherein determining said forward error correction method further comprises determining said segment data's length based on said preamble.

148. (Previously Presented): A method for receiving segments using different forward error correction methods on a network as recited in claim 144, wherein determining said forward error correction method further comprises correcting errors in said segment data using an error detecting method selected from the group consisting of Hamming codes, Convolutional codes, Reed-Solomon codes, Low Density Parity Check Codes, Trellis codes, Block Turbo codes and Walsh codes.

149. (Previously Presented): A method for receiving segments using different forward error correction methods on a network as recited in claim 144, wherein determining a forward error correction method further comprises detecting a preamble that is 40 bits in length.

150. (Previously Presented): A method for receiving segments using different forward error correction methods on a network as recited in claim 144, wherein determining a forward error correction method further comprises detecting a forward error correction method using a 5/16 rate forward error correction code.

151. (Previously Presented): A method for receiving segments using different forward error correction methods on a network as recited in claim 144, wherein determining a forward error correction method further comprises detecting a preamble that indicates no forward error correction.

152.-177. (Cancelled)